

Service Name

AWS Amplify

Service Overview

AWS Amplify is a comprehensive set of tools and services for building secure, scalable fullstack web and mobile applications. It provides frontend libraries, UI components, backend building tools, and hosting capabilities that enable developers to create cloud-connected applications with minimal configuration. Amplify offers a code-first developer experience where developers can define their backend using TypeScript and automatically provision AWS services like authentication, APIs, storage, and hosting. The platform supports multiple frameworks including React, Angular, Vue, Next.js, Flutter, React Native, iOS, and Android, making it versatile for various development needs.

Key Use Cases

- **Fullstack web applications:** Build complete web apps with authentication, real-time data, and hosting
- **Mobile applications:** Develop iOS, Android, Flutter, and React Native apps with cloud backend integration
- **Real-time collaborative applications:** Create messaging apps, project management tools, and chat applications with real-time data synchronization
- **Content management systems:** Build apps with file storage, user authentication, and content editing capabilities
- **E-commerce platforms:** Develop shopping apps with user accounts, product catalogs, and payment processing
- **Social media applications:** Create apps with user profiles, content sharing, and real-time interactions

Features

- **Authentication:** User sign-up, sign-in, and authorization using Amazon Cognito with support for SAML, OIDC, and social providers
- **Real-time Data APIs:** GraphQL and REST APIs powered by AWS AppSync with real-time subscriptions and offline synchronization
- **Storage:** File storage capabilities using Amazon S3 with different access levels and content management features
- **Hosting:** Fully managed hosting for static sites and server-side rendered apps with CI/CD and global CDN
- **DataStore:** Local data store with automatic cloud synchronization for offline-first applications

- **Functions:** Serverless functions using AWS Lambda for custom business logic and API extensions
- **Analytics:** User analytics and app usage tracking for understanding user behavior
- **Push Notifications:** Send targeted push notifications to mobile app users

Value Proposition

Customers should choose AWS Amplify for its comprehensive fullstack development capabilities that eliminate the complexity of configuring and managing multiple AWS services individually. Amplify provides a unified developer experience with type-safe, code-first backend definition using TypeScript, automatic provisioning of AWS resources, and seamless integration between frontend and backend:

- The platform offers built-in best practices for security, scalability, and performance while supporting multiple development frameworks and platforms
- Amplify's real-time capabilities, offline synchronization, and automatic scaling make it ideal for modern applications requiring responsive user experiences and global reach

Service Integration

AWS Amplify integrates deeply with core AWS services to provide comprehensive backend functionality. It uses Amazon Cognito for user authentication and authorization, AWS AppSync for GraphQL APIs and real-time subscriptions, Amazon DynamoDB for NoSQL database storage, and Amazon S3 for file storage:

- Amplify leverages AWS Lambda for serverless functions, Amazon CloudFront for global content delivery, and AWS CloudFormation for infrastructure provisioning
- The service is built on the AWS CDK, enabling seamless integration with any AWS service and supporting existing data sources including PostgreSQL and MongoDB
- This integration provides automatic scaling, security, and reliability across all backend components

Onboarding and Offboarding

Customers get started with AWS Amplify by installing the Amplify CLI and creating a new project using the quickstart guides available for different frameworks. The process involves configuring AWS credentials, defining the backend using TypeScript in the `amplify/backend/` directory, and deploying resources using `'npx ampx sandbox'` for development or `'npx ampx pipeline-deploy'` for production:

- Amplify Studio provides a visual interface for non-technical users to manage content and configure backends

- The platform offers comprehensive documentation, tutorials, and sample applications for React, Angular, Vue, Next.js, Flutter, React Native, iOS, and Android development

Getting Started Guide: <https://docs.amplify.aws/javascript/start/>

Data Removal

Data removal and offboarding in AWS Amplify involves deleting the app from the Amplify console through App settings > General settings. This process removes all associated resources including hosting, authentication, APIs, and storage. For comprehensive cleanup, customers should delete CloudFormation stacks, remove S3 buckets, and clean up any custom resources created. The offboarding process is straightforward and takes less than 2 minutes to complete through the console interface.

Backup/Restore and Disaster Recovery

AWS Amplify provides backup and disaster recovery through its underlying AWS services. DynamoDB tables support point-in-time recovery and automated backups. S3 storage offers cross-region replication and versioning capabilities. Amplify applications can leverage AWS Backup for centralized backup management across resources. The CDK-based architecture allows configuration of deletion protection and backup policies for critical resources.

Backup Capabilities

Amplify supports backup capabilities through AWS CDK constructs that can enable point-in-time recovery for DynamoDB tables and configure AWS Backup for advanced backup options. Customers can modify resource configurations to enable deletion protection and automated backups on supported resources using underlying CDK construct properties.

Disaster Recovery

Amplify supports disaster recovery through its multi-region architecture and serverless foundation. Applications can be deployed across multiple AWS regions with automatic failover capabilities. The service leverages AWS AppSync for real-time data synchronization and Amazon CloudFront for global content delivery, providing resilience against regional failures.

Recovery Objectives

Amplify helps customers meet RTO and RPO objectives through its serverless architecture that automatically scales and recovers. Real-time data synchronization minimizes data loss, while global CDN distribution ensures rapid recovery. The multi-region deployment capabilities and automated backup features support various DR strategies from backup-and-restore to active-active configurations based on requirements.

Service Constraints

Service Quotas: <https://docs.aws.amazon.com/general/latest/gr/amplify.html>

FAQ: <https://aws.amazon.com/amplify/faqs/>

Technical Requirements

Service Documentation: <https://docs.amplify.aws/>

User Guide: <https://docs.amplify.aws/javascript/start/>

API Reference: <https://aws-amplify.github.io/amplify-js/api/>

Pricing Overview

Please see the AWS UK G Cloud 15 Pricing Document accompanying this service in the Digital Marketplace.

Public Pricing: <https://aws.amazon.com/amplify/pricing/>

Cost Optimization

AWS Amplify offers unique cost optimization through its serverless architecture that automatically scales resources based on demand, eliminating idle capacity costs. The service provides pay-per-use pricing for hosting, builds, and backend resources:

- Customers can optimize costs by leveraging the AWS Free Tier with up to \$200 in credits for new accounts, implementing efficient caching strategies, and using appropriate storage classes
- The tiered pricing model for builds and hosting provides volume discounts, while the ability to pause sandbox environments reduces development costs
- Amplify's integration with AWS cost management tools enables detailed cost tracking and optimization recommendations

Savings Considerations

Main cost savings considerations include leveraging the generous free tier offering 12 months of free hosting and always-free development features. Customers save through reduced operational overhead as Amplify eliminates the need for server management, scaling, and infrastructure maintenance:

- The serverless architecture means paying only for actual usage rather than provisioned capacity
- Organizations can achieve significant cost reductions by consolidating multiple tools into Amplify's unified platform, reducing third-party service dependencies

- Development team productivity improvements through rapid prototyping and deployment capabilities translate to reduced development costs
- The automatic scaling prevents over-provisioning while ensuring performance during traffic spikes